Allergy Abstracts

Editor

M. M. ALBERT
Brooklyn

Associate Editors

M. HARTEN
Brooklyn, N. Y.

E. H. WALZER
Bridgeport, Conn.

E. W. KAILIN
Washington, D. C.

R. A. CHAIT
Rockville Center, N. Y.

H. J. FRIEDMAN
Cleveland, Ohio

J. SHERMAN
Baltimore, Md.

B. B. SIEGEL
Far Rockaway, N. Y.

RICHARD WISEMAN
Syracuse, N. Y.

KATHERINE BOWMAN
Brooklyn, N. Y.

Advisory Editor

M. WALZER
Brooklyn, N. Y.

From the Allergy Division of
The Jewish Hospital of Brooklyn

Volume 17, Number 2 March, 1952

Asthma and Hay Fever

Report of Death From Bronchial Asthma During Cortisone Therapy. Zoss, A. R., and Zodikoff, R.: Ohio State M. J. **47**: 825, 1951.

Intractable bronchial asthma developed in a 56-year-old man whose symptoms had first appeared about 6 months previously. When the usual therapeutic procedures had failed to relieve the attacks, ACTH was given with good results. After 10 days, ACTH was discontinued and oral cortisone, 75 mg. per day, was prescribed. About 5 weeks later, while still taking cortisone, the patient went to Denver, Colorado. Within 36 hours of his arrival, his asthma recurred with such severity that within a few hours death ensued. Postmortem examination revealed the usual findings in deaths due to bronchial asthma, plus a slight decrease in the amount of intercellular cortical lipoid and in the thickness of all the cortical layers. F.

Oral Cortisone Therapy in Intractable Bronchial Asthma. Schwartz, E.: J. A. M. A. **147**: 1734, 1951.

Twenty-two patients ranging in age from 5 to 67 years were treated orally with cortisone for chronic intractable bronchial asthma. None of the patients had previously responded to the usual antiasthmatic medications. A low sodium diet and potassium iodide were given concomitantly with the cortisone.

Relief from symptoms was obtained after 26 of the 31 courses of cortisone given to the 22 patients in the series. Improvement was noted from 5 to 72 hours after the beginning of therapy. Discontinuation of treatment or too rapid reduction of the daily dose resulted in partial or complete recurrence of the attacks. Sixty-one per cent relapsed within 2 weeks after cessation of therapy. There was no apparent relationship between total dosage or duration of therapy or both, and the length of remission. F.

Pituitary Gland Implantation as a Form of Therapy for Bronchial Asthma. Arnoldsson, H., and Pipkorn, H.: Acta Allergologica **4**: 279, 1951.

Fifteen patients with severe chronic bronchial asthma were treated by implantation of calf pituitary gland. Five patients cleared completely for periods varying from 14 days to 3 months. One patient was still free of asthma at the end of 6 months. No changes were detected in 17-keto-steroids, leucocytes, eosinophiles, and lymphocytes. In evaluating the therapeutic effect of this procedure, the influence of other factors, such as the operative procedure itself, psychotherapy, and spontaneous remission must be taken into account. H.

Oral Administration of Cortisone, Cortone in Bronchial Asthma. Salen, E. B.: Acta Allergologica **4**: 223, 1951.

Six cases of severe bronchial asthma were treated with ACTH followed by Cortone. In each case, it was possible to discontinue adrenalin and to reduce other medications to a minimum without causing an exacerbation of symptoms. Four cases remained symptom-free on a daily maintenance dose of 25 mg. of Cortone. No deleterious side effects were observed under this treatment. Despite complete remissions of symptoms, adequate eosinophile responses were not obtained in some cases until after the third or fourth injection of ACTH. ACTH did not confer protection against sensitivity to aspirin. H.

Dermatology

A Hemorrhagic Bullous Eruption Due to Penicillin G. Relationship Between Chemical Structure and Sensitizing Capacity of Penicillin G and Penicillin O. Samitz, M. H., Horvath, P., and Bellet, S.: Ann. Allergy **8**: 377, 1950.

A severe hemorrhagic bullous eruption developed in a 44-year-old man with rheumatic heart disease and subacute bacterial endocarditis, who was receiving large doses of penicillin G. When the antibiotic was discontinued, his eruption cleared. Subsequent treatment with penicillin O was not accompanied by any allergic reaction. Blister fluid was injected into the skin of a normal subject who received 300,000 units of penicillin G two days later. At the site of injection, a reaction characterized by erythema, edema, and papulization became manifest (a positive Urbach-Koengstein test). It is suggested that penicillin O be substituted for penicillin G in patients with marked sensitivity to the latter drug when it becomes necessary to administer large quantities of the antibiotic as a lifesaving procedure. E. W.

Sodium Para-Aminobenzoate Therapy of Eczema-Dermatitis. Loewenthal, L. J. A.: J. Invest. Dermat. **17**: 1, 1951.

Fifty-five patients with atopic dermatitis or with various forms of eczema were treated with from 1.5 to 4 Gm. of PABA four times daily. The author observed a marked improvement in the majority of the cases, many of whom had been resistant to all previous forms of therapy. No unpleasant side effects were noted. He concluded that PABA may produce marked relief in patients with severe eczematoid dermatitis. R. W.

The Treatment of Acute Poison Ivy Dermatitis With 3-n-Pentadecyl Catechol by the Intradermal Route. A Preliminary Report. Kiel, H.: Ann. Allergy **8**: 356, 1950.

The active ingredient in the poison ivy plant is a catechol with an unsaturated side chain, an unsaturated oil which is unstable and cannot be standardized by chemical methods. Positive reactions are produced in Rhus-sensitive patients by patch tests with 3-n-pentadecyl catechol which is stable, readily standardized, and easily handled. This substance, in a dilution of 0.001 per cent dissolved in sterile peanut oil, was administered intracutaneously, in 2 doses at 2-day intervals to 25 patients who had had 27 moderately severe to very severe attacks of poison ivy dermatitis. The most striking results were obtained in 14 very severe attacks of ivy dermatitis where there was rapid amelioration of subjective symptoms and the course of the eruption was shortened. No constitutional or other important side effects were noted. The difficulty encountered in evaluating therapeutic agents in Rhus dermatitis is stressed. E. W.

Influence of Histamine Upon Fungistatic Action of Antihistaminics. Landis, L., and Krop, S.: Proc. Soc. Exper. Biol. & Med. **76**: 538, 1951.

The fungistatic action of various antihistaminics was tested by incubating dilutions of the drugs with a culture of Trichophyton metagrophytes in Sabouraud's maltose broth. The antihistaminic agents were found to be fungistatic, though not fungicidal. The inhibition of fungal growth was prevented to a certain extent by the addition of histamine, but not of histidine. The addition of histamine did not inhibit the fungistatic action of undecylenic acid. Thus, the antihistaminics may be of value in dermatophytoses by controlling the allergic response in host tissue as well as by their fungistatic action B. S.

Histamine Antagonist Therapy in Dermatology. Warin, R. P.: Brit. J. Dermat. **62**: 159, 1950.

The effects of antihistamines on various dermatologic disorders are discussed. In a group of 40 patients with chronic urticaria, every case was modified to some extent by the administration of either Anthisan or Phenergan. The dosage required for relief varied widely from patient to patient. In the eczematous dermatitis groups, beneficial effects were obtained only when edema was present, as in contact or sensitization eczema. Antihistaminics controlled the pruritus of eczema, but not that of scabies or circumscribed neurodermatitis. They were ineffective in 11 patients with rosacea, in 10 patients with dermatitis herpetiform, and in 12 patients with lupus erythematosus. C.

Eczematous Reactions to Kwell (Gamma Benzene Hexachloride). Reicher, A. J.: Arch. Dermat. & Syph. **64**: 209, 1951.

A severe generalized papulovesicular eruption occurred in a 29-year-old woman and her 3-year-old daughter 24 hours after the use of an antiscabietic, Kwell ointment (0.5 per cent of gamma benzene hexachloride in a vanishing cream base). A similar reaction to the same ointment has been reported previously. The author recommends that patch tests be made prior to the use of this medication. C.

Histoplasmin and Coccidioidin Sensitivity in Norway. Böe, J., Linden, V., and Treit, J.: Acta med. Scandinav. **139**: 196, 1951.

Tuberculin, coccidioidin, and histoplasmin tests were performed on 1,074 individuals. Positive histoplasmin reactions were observed in 27; 3 had positive reactions to coccidioidin only. Twenty-three subjects showed positive reactions to both histoplasmin and coccidioidin. There was no evidence of pulmonary mycotic infection or of other diseases that could be associated with such infection in the 53 positive reactors. Fifty of the 53 also had positive tuberculin reactions. The 3 subjects who were tuberculin-negative, and mycotic-antigen positive showed no pulmonary calcifications.

The writers believe that some of the positive histoplasmin reactions were caused by past or present infection with Histoplasma capsulatum. The large number of positive reactions to both histoplasmin and coccidioidin is attributed to cross reactions due to systemic infections with one or more fungi immunologically closely related, possibly Geotrichum. H.

Studies in Sensitization to Halogenated Hydroxyquinolines and Related Compounds. Leifer, W., and Steiner, K.: J. Invest. Dermat. **17**: 233, 1951.

Three patients developed dermatitis medicamentosa following the prolonged application of either Vioform or Diodoquin. All showed positive reactions when patch tested with various halogenated hydroxyquinolines, the position halogenated not influencing the reaction. Patch tests made with quinoline compounds which were not halogenated or did not contain a hydroxyl radical gave negative reactions. These subjects also showed positive reactions to carboxylated pyridines (a common degradation product of the substituted quinolines). It is suggested that group sensitivity exists to the halogenated hydroxyquinolines and that the carboxylated pyridines form the actual antigenic complex. When the skin was in a quiescent phase, a severe flareup of the dermatitis was produced in one case following the oral ingestion of a single tablet of Diodoquin (210 mgm. of the drug). R. W.

Allergic Reactivity to Simple Aliphatic Acids in Man. Weil, A. J., and Rogers, H. E.: J. Invest. Dermat. **17**: 227, 1951.

A 22-year-old atopic woman with a known contact sensitivity to formalin developed a vesicular papular eruption following exposure to acetic anhydride. When patch tested with the acetic anhydride, she experienced marked pruritus one minute after application of the chemical and in 24 hours had a typical eczematoid response. Following intracutaneous tests with several of the simple aliphatic acids, the patient showed immediate positive reactions to acetic anhydride, formic acid, acetic acid, and propionic acid. None of these reactions could be passively transferred. Intracutaneous tests with other acids or the acetyl radical were negative, suggesting a specific sensitivity to the acid compound itself. Three months following avoidance of all contact with the anhydride, intracutaneous tests were negative but no further patch tests were done at this time. R. W.

Otorhinology and Ophthalmology

The Present Status of ACTH and Cortisone in Clinical Ophthalmology. Woods, A. C.: Am. J. Ophth. **34**: 945, 1951.

In 235 cases of inflammatory ocular disease treated parenterally with ACTH and cortisone and topically with cortisone, favorable results were obtained in 191 instances. In 44 cases, these drugs were ineffective. There were

31 recurrences. Both ACTH and cortisone have a dramatic ability to control the inflammatory and exudative phases of certain ocular diseases. Following parenteral injections, the therapeutic effect is roughly proportional to the drop in circulating eosinophiles. The diseases most favorably affected are allergic conditions of the lids and external eye, inflammations of the cornea, sclera, and uveal tracts. Even after apparent complete control, recurrences are common when the drugs are discontinued.

Parenteral administration of ACTH or cortisone is the method of choice in inflammation of the posterior ocular segment. Topical application of cortisone is preferred in inflammation of the anterior ocular segment. Untoward side effects were not encountered after parenteral injection or after topical application in the doses recommended. C.

Antihistamine Drugs and the Eye. V. The Effect of Synthetic Antihistamines on Corneal Sensitivity, Intraocular Pressure, Pupillary Diameter, and Accommodation of the Normal Eye. D'Ermo, F., and Santorocco, N.: Boll. d'ocul. **30**: 99, 1951.

Many of the antihistaminic drugs were found to be harmful to human corneal epithelium. Most of these drugs, even in weak dilution, reduced the corneal reflex. Conjunctival instillation of a 2.5 per cent Antistine solution reduced intraocular pressure of normal eyes 5 to 7 mm. Hg for a period of 30 to 40 minutes. Instillation of Antergan 1:1000 produced slight miosis, while 1.5 per cent Benadryl was followed by occasional mydriasis. C.

Antihistamine Drugs and the Eye. VI. Synthetic Antihistamines in Allergic Eye Diseases. D'Ermo, F.: Boll. d'ocul. **30**: 135, 1951.

The results of antihistaminic treatment in 316 patients with various allergic and nonallergic diseases of the eye are tabulated. Phenergan and Pyribenzamine were the drugs most frequently used. Administration was usually oral or by instillation into the conjunctival sac.

Typically allergic lesions such as angioneurotic edema of the lids and blepharoconjunctivitis due to contact, were rapidly improved by antihistamine treatment. Inconsistent results were obtained in chronic conjunctivitis, squamous or ulcerative blepharitis, lymphatic keratitis, recurrent episcleritis, hypopyon iritis, uveitis, phacoanaphylactic endophthalmitis, and glaucoma in allergic subjects. Antihistamine therapy is recommended for subjective relief of symptoms. C.

Nasal and Cutaneous Allergy to Cortisone. Bernstein, D.: New York State J. Med. **51**: 1849, 1951.

Within 5 minutes after the first intramuscular injection of 100 mg. of cortisone, a 40-year-old woman who was being treated for vasomotor rhinitis developed complete nasal obstruction and wheezing. Urticaria and swelling of the eyelids and cheeks ensued. An injection of adrenalin brought prompt relief. The next day, upon her insistence, she was given 50 mg. of cortisone intramuscularly. Within 5 minutes, she had a similar, but less severe reaction. This patient had been receiving antihistaminic drugs at the time of both reactions. B. S.

Miscellaneous Allergies

The Immunophysiology of Serum Sickness. Alterations in the Blood Volume and Thiocyanate Space in Relation to the Development of Humoral Antibodies in the Rabbit. Aikawa, J. K., and Harrell, G. T.: J. Clin. Investigation **30**: 360, 1951.

The plasma volume of rabbits was determined using a dye dilution method and thiocyanate space was also measured. The rabbits were then injected with human plasma to induce serum sickness. During the peak of the disease or at the time precipitins appeared, blood volume and thiocyanate space studies were repeated, a minimum of 7 such determinations being made. Increases in the thiocyanate space, indicating edema fluid available for dilution of thiocyanate ions, occurred first between the third and sixth days, coinciding with the appearance of precipitins and the onset of clinical manifestations of serum sickness. A second rise occurred between the eleventh and twentieth days and usually coincided with an increase in subcutaneous edema. Plasma volume decreased, particularly in those animals that were clinically most affected and those which showed the greatest increase in thiocyanate space. In the severely ill animals, hematocrit readings also dropped with the first rise in thiocyanate space, notwithstanding a decreased plasma volume. No such effect on the hematocrit was noted with the second rise in thiocyanate space. Positive precipitin tests were observed between the third and twelfth days following the initial plasma injection. In all cases, the baseline values were reached 20 days after the initial injection of serum. It is suggested that crystalloids, colloids, and red blood cells are progressively lost from the circulation as the serum sickness defects of the vascular tree progress. K.

Hemorrhagic Bullous Urticaria Treated With Corticotropin. Lichtenstein, G. M., and Friedman, T. B.: J. A. M. A. **147**: 1658, 1951.

A patient who had received previous penicillin therapy was given 5 daily injections of depot penicillin G in oil. Ten days later, generalized urticaria developed and could not be controlled by either epinephrine or antihistaminics. After several days, multiple large bullous and cutaneous hemorrhagic areas appeared on the trunk and upper extremities. There was widespread brawny edema, elevation of temperature, and intense pruritus. Treatment with corticotropin, 20 mg. every 6 hours, was started. Definite improvement was evident in 48 hours. The patient has remained asymptomatic since the corticotropin therapy. F.

The Injection and Ingestion Test in Cross-Sensitization to the Para Group. Sidi, E., and Dobkevitch-Morrill, S.: J. Invest. Dermat. **16**: 299, 1951.

Twenty-five patients with a known contact sensitivity to sulfonamide powder were given 0.1 Gm. of procaine orally. Eleven of the cases developed either a localized or a generalized flareup of the dermatitis. Ten patients with eczema due to topical application of local anesthetics were fed 0.5 Gm. of paraaminophenylsulfamide. A definite exacerbation of the eruption occurred in 80 per cent of the cases. When 24 subjects with paraphenylenediamine sensitivity were given either sulfonamide or procaine, 2 flareups occurred following the sulfonamide and one following procaine. Ingestion tests with procaine and paraaminophenylsulfamide carried out in subjects with sensitivities to chemically related substances, such as those occurring in rubber, nylon stockings, tincture of arnica, and picric acid, produced occasional positive responses. Since many patients with sensitivities to the para group also developed severe reactions following the parenteral administration of procaine, the authors stress the importance of recognizing such sensitivities if severe procaine reactions are

to be prevented. It was concluded that cutaneous sensitivity to this group of compounds can be activated by systemic exposure to the same antigen or to a chemically related substance. R. W.

Serum Disease, an Antibody Reaction With Own Serum. Schwarz, G.: Acta Allergologica **4**: 235, 1951.

In patients with severe serum disease, positive skin reactions could be obtained not only with horse serum but also with ox, sheep, and other animal sera, as well as with the patient's own serum. Positive passive transfer reactions could be elicited in many instances with these sera and with the patient's own serum. Passive transfer antibodies were demonstrable 6 days after the end of serum sickness and, in some instances, for as long as 2 or 3 weeks after severe serum sickness.

The author concludes that, following serum disease, the patient is sensitized to a specific horse antigen and to a nonspecific serum antigen. This common or nonspecific allergen is a constituent part of the serum of all mammal groups and human beings. H.

Fixed Drug Eruption and Epididymitis Due to Antipyrine. McCulloch, H., and Zeligman, I.: Arch. Dermat. & Syph. **64**: 198, 1951.

A generalized pruritic eruption appeared in a 64-year-old male 24 hours after the ingestion of a cold preparation containing antipyrine. Fourteen days later, an acute epididymitis developed. After the skin lesions and epididymitis had disappeared 60 mg. of antipyrine was administered to the patient. Within 60 minutes, he experienced severe pruritus in all previously affected sites and on the next day he had an eruption similar in character and distribution to that seen on admission to the hospital. Twelve days after the ingestion of the test dose of antipyrine, a left epididymitis again developed. There was a history of a similar eruption having occurred 15 years previously and 18 months prior to the present hospital admission, following the ingestion of the same cold preparation. C.

Occurrence of Allergic Reactions to Treatment With Penicillin and Streptomycin. Schuppli, R.: Schweiz. med. Wchnschr. **81**: 589, 1951.

Of 53 patients with allergic reactions to penicillin, only 2 had been treated previously with penicillin. In all others, the allergic reaction manifested itself about the tenth day after the first injection and consisted mainly of urticarial, eczematous, and id-like eruptions.

The 7 patients who developed allergic reactions to streptomycin were nurses who had had contact with the drug for variable periods of time. H.

Polyarteritis Nodosa: A Review Together With Report of a Case Due to Hydantoin Sensitization Treated With Cortisone. Frankel, A. L., and Rothermich, N. O.: Ohio State M. J. **47**: 1013, 1951.

The hydantoin drugs are now widely employed in the treatment of grand mal and psychomotor seizures. They all possess the same basic structure and are closely related chemically and perhaps antigenically to the barbiturates. Various types of toxic and hypersensitive reactions are seen in patients treated with these drugs. In the case reported, the administration of dilantin produced an urticarial reaction. Mesantoin was substituted for the dilantin and within a few days edema of the face, hyperpyrexia, and weakness appeared. The patient became progressively worse. Cortisone was administered intramuscularly for 2 days with dramatic improvement after 14 hours. Twenty-four hours

after cortisone was discontinued, the patient became critically ill and death occurred in spite of the reinstitution of cortisone therapy. Autopsy findings showed evidence of a widespread necrotizing arteritis. F.

Severe Reaction to Intramuscular Injection of Liver Extract. McAteer, D. A.: New York State J. Med. **51**: 1433, 1951.

A 74-year-old man with pernicious anemia had received 40 liver injections with no untoward reactions. After the forty-first injection, he developed dryness of the mouth, swelling of the face, expiratory dyspnea, and an urgent desire to defecate. These symptoms disappeared within a short time. About a month later he was given another injection of liver extract, after having received an antihistaminic drug. Within 10 seconds, he complained of a dry mouth, his face became flushed, he developed asthmatic breathing and rapidly lost consciousness. He was given 0.5 c.c. of epinephrine subcutaneously, a similar amount intramuscularly, and immediately thereafter 0.5 c.c. of epinephrine intravenously. Within a few moments after the last injection, his respirations improved, his pulse became stronger, and he became partially conscious. An intravenous injection of 5 c.c. of Benadryl was followed within a short time by complete recovery. B. S.

Unusual Reaction to Aureomycin. Gittell, G.: J. A. M. A. **147**: 1141, 1951.

A 36-year-old female was given a 3 day course of aureomycin (total: 3.75 mg.) for a respiratory illness accompanied by secondarily infected interdigital dermatophytosis. After an interval of 2 days a single dose of aureomycin (250 mg.) was administered. This dose was followed within a few hours by swelling of the upper lip and eyelids. The next day the patient suddenly went into a shocklike state and collapsed. The eyelids and upper lip were edematous. Treatment with epinephrine and Pyribenzamine provided relief. Generalized urticaria appeared the next day and was controlled with Pyribenzamine. F.

Periarteritis Nodosa: Report of a Case Treated With ACTH and Cortisone. Mundy, W. L., Walker, W. G., Bickerman, H. A., and Beck, G. J.: Am. J. Med. **11**: 630, 1951.

A 49-year-old man with a history of bronchial asthma developed typical signs and symptoms of periarteritis nodosa about 3 years after the onset of the asthma. The symptoms were severe and progressive in nature until treatment with ACTH was begun. Dramatic relief of the asthma and a progressive improvement of the periarteritis nodosa were soon evident. In a period of 2 years the patient has received 4 separate courses of ACTH. Maintenance doses of cortisone appear to be keeping the symptoms in abeyance. F.

Purpura and Nephritis After Administration of Procaine Penicillin. Spring, M.: J. A. M. A. **147**: 1139, 1951.

Twenty-four hours after the injection of 300,000 units of procaine penicillin, a 53-year-old man began to have abdominal cramps, myalgia, swelling of the hands and legs, and a vesicular and macular purpuric skin eruption. Laboratory studies revealed the presence of nephritis and azotemia. Meningococcemia was suspected, but this diagnosis could not be substantiated by the ensuing clinical course or by laboratory findings. Nephrosis developed about 3 weeks after the onset of symptoms. Skin tests with crystalline penicillin and procaine penicillin G gave no significant reactions. Nine months after discharge from the hospital the patient still had definite evidence of a chronic nephritis. F.

Anaphylaxis

Ocular Changes in the Course of Anaphylactic Shock in the Guinea Pig and Rabbit. D'Ermo, F.: Acta Allergologica **4**: 270, 1951.

Fatal anaphylactic shock in both the guinea pig and rabbit is accompanied by histologic changes in the eye. These changes are limited to the optic nerve and consist chiefly of edema and leucocytic infiltration. Traces of histamine can be demonstrated in the aqueous humor of the rabbit at the height of the anaphylactic reaction. H.

The Effect of Thorotrast on Anaphylactic Phenomena. Ambrusy, J. L., Ambrus, C. M., and Harrison, J. W. E.: Acta Allergologica **4**: 201, 1951.

Thorotrast administered in various doses at different time intervals before reinjection of antigen in sensitized guinea pigs failed to inhibit anaphylactic shock. Inhibition of shock was not accomplished by the injection of Thorotrast prior to passive sensitization. Thorotrast failed to inhibit the Schultz-Dale phenomenon and had no effect on the action of histamine, acetylcholine, adenosinetriphosphate, or potassium in the Schultz-Dale bath.

The results in guinea pigs differed from those obtained in anaphylaxis studies in the dog. H.

Pharmacology, Physiology, and Pathology

The Effect of Intravenous Infusions of Physiologic Saline Solution on the Pulmonary Arterial and Pulmonary Capillary Pressure in Man. Doyle, J. T., Wilson, J. S., Estes, E. H., and Warren, J. V.: J. Clin. Investigation **30**: 345, 1951.

Twelve adult men who were convalescent from noncardiac ailments were subjected to pulmonary artery catheterization, using a dye dilution technique with direct withdrawal of blood samples from a peripheral artery, vital capacity measurements, and electrocardiograms. It was determined that the pulmonary arterial pressure can be increased from 43 to 150 per cent by the intravenous infusion of physiologic saline at a rate of 77 to 146 c.c. per minute. Cardiac output may or may not be increased and did not appear to influence pulmonary pressures. Five of 8 subjects showed a decrease in vital capacity at the end of the infusion, although none complained of dyspnea. In 4 cases, repeated direct peripheral arterial pressures remained unchanged. The peripheral veins were regularly distended and the general blood volume increased an average of 14 per cent as measured by hematocrit. In 10 cases, the pulmonary blood volume increased an average of 12 per cent, varying from minus 6 to plus 45 per cent over the control period. Pulmonary blood volume measured about 20 per cent of the general blood volume in both the control and infusion periods. The "so-called pulmonary capillary pressure" was also increased in all the patients observed. The pressure gradient between the pulmonary artery and pulmonary capillary remained unchanged during the infusion in 1 case where both were simultaneously measured. Suggestive evidence was obtained to the effect that pulmonary venous pressure was also increased but that the gradient between arterial and venous pressures was not greatly altered in the process. It is suggested that the mechanism of increased pulmonary arterial pressure during infusion appears to be due to an increase in the volume of blood contained in the relatively indistensible pulmonary circuit. K.

The Clinical Physiology of the Human Bronchi. III. The Effect of Vagus Section on the Cough Reflex, Bronchial Caliber and Clearance of Bronchial Secretions. Klassen, K. P., Morton, D. R., and Curtis, G. M.: Surgery **29**: 483, 1951.

Unilateral vagotomy was done at exploratory thoracotomy in 7 patients with inoperable bronchogenic carcinoma in order to study the physiology of the bronchial tree.

The cough reflex arising from the homolateral bronchial tree was abolished, but was intact on the opposite side in all cases. This would indicate that the afferent fibers transmitting bronchial impulses resulting in initiation of the cough reflex are carried by the homolateral vagus nerve.

Pain of bronchial origin was abolished on the homolateral side. In a few instances, pain was referred to the contralateral anterior cervical region. This suggests that the afferent fibers transmitting pain from the bronchial tree are carried mainly by the homolateral vagus nerve, but that in a few instances some of the afferent fibers are carried by the contralateral vagus. These studies were done by bronchoscopy. Using bronchoscopy, fluoroscopy and bronchography, it was found that the physiologic movements and changes in caliber of the bronchial tree during inspiration and expiration were not altered on the homolateral side as compared to the contralateral side. No gross changes were noted in the amount or consistency of the bronchial secretions on the 2 sides. Postbronchography chest films revealed no impairment of the tracheobronchial clearance of lipiodol.

In the 3 patients with intractable asthma in whom bilateral vagotomy was performed, bronchospasm was found to persist. J. S.

Experimental Hypersensitivity in the Rabbit. The Cellular Localization of Soluble Azoproteins (Dye-Azo-Human Serum Albumins) Injected Intravenously. Lotta, H., Gitlin, D., and Janeway, C. A.: Arch. Path. **51**: 260, 1951.

Protein antigens were labelled with 3 different azo dyes and injected intravenously into rabbits. For control purposes, the dyes alone were injected into rabbits. The animals were sacrificed on varying days after injection. The protein dyes were seen as small, round granules in the cytoplasm of cells of various tissues. There seemed to be a correlation between the tissue localization of the protein-dye granules and the common sites of the lesions of hypersensitivity. In the heart, there was a striking constant localization of the dye proteins in the cells of the cardiac valves. In the kidney, similar granules were found in the epithelial cells of the renal tubules and in the glomeruli. In the lung, the protein-dye granules were found localized in macrophages which were seen about the smooth muscle of the bronchi, around the pulmonary arteries, and irregularly scattered about the lung parenchyma. In the joints, the granules were seen in the cells of the synovial membrane. In the liver, the granules were found in the liver cells. They were also found in the cells of the adventitia of arteries and in macrophages generally scattered throughout the connective tissue. The control animals had no such distinctive localizations of dye granules. With the exception of the liver, the protein-dye granules were found in highest concentration in those sites commonly affected in hypersensitive animals and in human diseases suspected of being due to hypersensitivity. J. S.

The Effect of Adrenocorticotropic Hormone on Inflammation Due to Tuberculin Hypersensitivity and Turpentine and on Circulating Antibody Levels. Osgood, C. K., and Favour, C. B.: J. Exper. Med. **94**: 415, 1951.

Guinea pigs actively sensitized with heat killed tubercle bacilli were skin tested with 5 gamma of P. P. D. and the reactions were read for erythema and

edema after 24 to 48 hours. ACTH was then injected subcutaneously every 8 hours for 16 days at which time the tests were repeated. Sensitized control animals received saline instead of ACTH. Normal controls received both saline and ACTH. Both the edema and erythema of the tuberculin reaction were markedly diminished following ACTH therapy. Only 5 animals of 23 treated lost their skin reactions and these animals had dark skins which tended to mask erythema. One animal in the saline-treated group lost its skin reaction to tuberculin and others showed "decreased skin reactivity while receiving saline." It was presumed that an intercurrent illness was responsible. The mean value for average diameter of skin reactions did not change in the saline or untreated groups. A similar experiment was conducted with intracutaneous injections of turpentine before and after ACTH treatment. The necrotic lesions were not affected by ACTH, but the peripheral erythema and induration were suppressed. There was diminution also in the erythematous skin response in 5 of 6 animals treated with saline. Tuberculin complement-fixing antibody titers were measured before, during, and after ACTH or saline treatment. No change in the average titer was found for any group. It is suggested that adrenal hormones limit the local tissue response to primary cell injury. K.

Antibody in Lymphocytes from Hyperimmunized Rabbits. Erslev, A.: J. Immunol. **67**: 281, 1951.

Rabbits hyperimmunized with a polyvalent pneumococcal vaccine were bled before and during immunization. Bleedings of each day were pooled and the white blood cells from approximately 100 ml. of blood were separated by repeated washings of purified buffy coats. Extracts were prepared after the cells were fragmented by means of repeated freezings and thawings. Quantitative immunochemical techniques were used to analyze the antibody protein content of the extract. No significant amount of antibody protein was found in the lymphocyte extract in spite of the fact that appreciable amounts of antibody were present in the same volume of plasma. R. W.

Experiences With ACTH and Eosinophil Counts in Normal Pregnancy and Toxemia. Ferguson, J. H.: Am. J. Obst. & Gynec. **61**: 603, 1951.

Eosinophil counts were done in normal pregnant women, pre-eclamptic patients, and nonpregnant controls. No significant differences were noted. The 4-hour epinephrine test was normal in the pre-eclamptics as well as in the normal pregnant women, indicating normal anterior pituitary-adrenocortical function. In eclampsia, there is often disappearance of eosinophils from the circulation, but this is not a constant phenomenon.

ACTH had no effect on preeclampsia. The normal pregnant woman, when given ACTH, failed to show the usual physiologic responses, such as fall in eosinophil count, water retention, or other expected metabolic changes. It is thought that pregnancy renders women resistant to ACTH. J. S.

Sulfhydryl Inhibition as a Mechanism in the Effects of ACTH and Cortisone. Anderson, G. E., Wiesel, L. L., Hillman, R. W., and Stumpe, W. M.: Proc. Soc. Exper. Biol. & Med. **76**: 825, 1951.

The extent of spread of intracutaneously injected India ink solutions, with and without hyaluronidase, was compared in mice. These animals were then given 2 injections of cortisone at 12-hour intervals. Six hours after the second dose, an intracutaneous test with the India-ink-hyaluronidase solution was repeated. After 30 minutes, each animal was given reduced glutathione (free

sulfhydryl) intraperitoneally and the India-ink-hyaluronidase skin test was again repeated. In 15 of 18 mice tested, the skin-spreading effect of the hyaluronidase was depressed by the cortisone and this depressive effect was in turn inhibited by the reduced glutathione. When oxidized glutathione was substituted, there was no change in the cortisone-inhibited hyaluronidase spreading phenomenon. This evidence suggests that cortisone exerts its inhibitory effect on the hyaluronidase enzyme system by sulfhydryl deprivation. B. S.

Antihistamine Drugs and the Eye; Action on the Conjunctival Flora. D'Ermo, F., and Salvi, G.: Boll. d'ocul. **30**: 3, 1951.

The antibacterial action of Antergan, Neoantergan, Pyribenzamine, Benadryl, Thephorin, Antistine, and Fargan on Staphylococcus pyogenes albus and aureus, Streptococcus, Pneumococcus, Morax-Axenfeld bacillus, Xerosis bacillus, and Koch-Weeks bacillus was studied in vitro using drug dilutions between 1:1000 and 1:20,000. The pH was kept between 7.2 and 7.4 and the temperature at 37° C. A definite antibacterial action was found with all of these drugs, particularly Antergan, Pyribenzamine and Fargan. Staphylococci and Streptococci were most easily destroyed. The drugs were least effective on Morax-Axenfeld and Koch-Weeks bacilli. No parallelism between the antibacterial effect and the antihistamine action was found. C.

Fall of Circulating Eosinophils After Administration of Epinephrine. Braunsteiner, H., Pakesch, F., and Vetter, H.: Wien klin. Wchnschr. **63**: 359, 1951.

The fall of circulating eosinophils following the injection of 0.3 mg. of epinephrine as a test for adrenal cortex deficiency was studied in 114 patients. Eight patients in the group were known to have adrenal cortex deficiency, while the other individuals were either normal or suffering from various types of illnesses.

The absence of a 30 per cent or more fall in circulating eosinophils within 4 hours after epinephrine injection on repeated examinations was regarded as a highly probable but not infallible indication of adrenal cortex deficiency. The presence of extremely low or high eosinophil counts and of chronic disease impairs the reliability of the test.

L-nor-epinephrine failed to show any eosinopenic action. Ephedrine induced a fall of 50 per cent or more in the eosinophil count. The eosinopenia produced by epinephrine was not inhibited significantly by sympatholytic drugs, such as dibenamine and dihydroergotamine, or by massive doses of desoxycorticosterone or progesterone. H.

Action of Ascorbic Acid on Tuberculin-Sensitivity in Guinea Pigs and Its Modification by Dietary and Hormonal Factors. Long, D. A., Miles, A. A., and Perry, W. L. M.: Lancet **1**: 1085, 1951.

Guinea pigs inoculated with BCG were maintained on a pellet diet supplemented with either ascorbic acid or raw cabbage prior to tuberculin testing. Many of these animals were also given either ACTH or cortisone before the skin testing was performed. The results indicated that neither cortisone nor ACTH had any direct effect on tuberculin allergy in the guinea pig. Their inhibiting action was shown to depend upon dietary factors. The presence of ascorbic acid was found to be a necessary factor in the inhibition of the tuberculin reaction. R. W.

Localization of Antigen in Tissue Cells. V. Capsular Polysaccharide of Friedlander Bacillus, Type B, in the Mouse. Hill, A. G. S., Deane, H. W., and Coons, A. H.: J. Exper. Med. **92**: 35, 1950.

Friedlander type B capsular polysaccharide was administered in a single dose intravenously or by inhalation to mice. Using a modification of the usual technique, sections of a variety of tissues were prepared and were subjected to "staining" by fluorescein conjugated antibody to the polysaccharide. The sections were examined under the fluorescence microscope. The time interval between antigen injection and sacrifice for histologic study varied from 4 hours up to 5 months. The antigen "was rapidly taken up by phagocytic cells throughout the body, where it persisted in decreasing concentration for more than 33 days. It was widely distributed in the capillary endothelium and on collagenous fibers in all organs. It made a transient appearance in or on lymphocytes in the spleen and lymph nodes. It was found in the hepatic epithelium and in the bile, in the juxtaglomerular segment of the distal renal tubules and in an occasional cast in the lumens of collecting tubules, in the epithelium of some uterine glands, and in cells in the steroid-secreting tissues in the ovary, suprarenal cortex and perhaps of the testis. . .

"In joints the synovial membranes contained large amounts of antigen, and some also penetrated into cartilage cells adjacent to the joint cavity. Osteoblasts and a few osteocytes also took up the polysaccharide."

It was noteworthy that polysaccharide administered intravenously was not particularly concentrated in any tissues of the lungs. The macrophages of the lung became only faintly fluorescent and the only other lung tissue where antigen was detectable was the capillary endothelium and then only in the early stages of the experiment. Antigen administered by inhalation was much more concentrated in the lungs, produced areas of consolidation with exudate in the alveolar lumens, and cellular infiltration (macrophages, lymphocytes, and a few polymorphonuclear leucocytes). Polysaccharide was concentrated in macrophages, particularly in areas of consolidation. An occasional loop of capillary contained antigen in its endothelium and small cells believed to be lymphocytes also fluoresced. The bronchial epithelium contained no antigen, although polysaccharide was demonstrable in the exudate in bronchial lumens. Small amounts of antigen were detected in the hilar and tracheal lymph nodes. Antigen persisted longest in the Küpffer cells of the liver and in the macrophages of the spleen where it could be detected 5 months after injection. K.

Effect of X-rays Upon the Hemolysin Production in the Rat. Kohn, H. I.: J. Immunol. **66**: 525, 1951.

Rats were injected both subcutaneously and intravenously with washed sheep erythrocytes. At stated intervals just prior to or following the injection, the animals were exposed to constant doses of x-ray radiation and the antibody titers were then studied. The results showed that the greatest reduction in titer, as well as a delay in its onset, occurred when irradiation was given from 1 to 3 days prior to the antigenic stimulation. Somewhat lesser titers were also demonstrable when the rats were irradiated either just before or shortly following the injections. The route of antigenic injection was found to be an important factor in determining which organs would be responsible for antibody production and be affected by irradiation. There was no evidence that irradiation released appreciable and lasting amounts of hemolysin or accelerated its disappearance. R. W.

Miscellaneous

Antigen Elimination From the Blood as an Early Manifestation of the Immune Response. Talmage, D. W., Dixon, F. J., Bukantz, S. C., and Dammin, G. J.: J. Immunol. **67**: 243, 1951.

I^{131} labelled bovine gamma globulin was injected intravenously into sensitized, anamnestic, control, and x-rayed rabbits. In the sensitized rabbits, there was an immediate rapid fall in antigen levels so that the serum was almost devoid of antigen at the end of 60 hours. This rapid antigen elimination immediately preceded the appearance of detectable antibody. In anamnestic animals, the serum was cleared of antigen in 5 days, whereas control animals retained the antigen for 7.5 days. Rabbits pretreated with x-ray showed no increase in the antigen disappearance rate indicating an absence of antibody formation. The intravenous injection of homologous specific antibody reproduced the immediate rapid fall in blood antigen concentration seen in actively sensitized animals with circulating antibody. Antibody could not be detected in the serum during the phase of accelerated antigen disappearance. It is concluded that the rate of elimination from the blood of I^{131} labelled bovine gamma globulin appears to be an early and sensitive manifestation of the immune response. R. W.

Diffuse Glomerulonephritis Induced in Rabbits by Small Intravenous Injections of Horse Serum. McLean, C. R., Fitzgerald, J. D. L., Younghusband, O. Z., and Hamilton, J. D.: Arch. Path. **51**: 1, 1951.

Diffuse glomerulonephritis was produced in 20 of 31 albino rabbits treated with small daily intravenous doses of horse serum for from 3 to 13 months. The experimentally induced lesions closely resembled the renal lesions of human glomerulonephritis. The lesions passed through acute, subacute, and chronic phases with scarring and atrophy, leading to urea nitrogen retention.

Skin tests with the antigen were positive in 18 of the 20 animals, but all 20 showed demonstrable antibodies (precipitins).

Necrotizing arteritis and cardiac valvulitis, seen in animals treated with large doses of foreign protein, were not found in the animals of this experiment. J. S.

Absence of a Prosthetic Group in a Type-Specific Polysaccharide of Pneumococcus. Heidelberger, M., MacLeod, C. M., Markowitz, H., and DiLapi, M. M.: J. Exper. Med. **94**: 359, 1951.

Specific type III pneumococcal polysaccharide was purified to the point where as little as 0.05 per cent of nitrogen and 0.01 per cent of phosphorus remained. This preparation was almost as effective in precipitating antibody after purification as was an unpurified portion of the same polysaccharide. Five individuals received injections of the highly purified antigen and developed good antibody titers. It is concluded that there is no prosthetic group involved in these characteristic antigen activities of pneumococcus polysaccharide. K.

The Adsorption of Proteins on Erythrocytes Treated With Tannic Acid and Subsequent Hemagglutination by Antiprotein Sera. Boyden, S. V.: J. Exper. Med. **93**: 107, 1951.

Suspensions of sheep erythrocytes when treated with inulin become capable of adsorbing horse serum albumin from solutions in saline. The treated cells were agglutinable by anti-horse-serum albumin sera. Not all prepara-

tions of inulin were able to alter the cell wall so that foreign protein would be adsorbed. It was noted that active inulin preparations were apt to agglutinate untreated cells. Tannic acid, which also agglutinates erythrocytes, was tested for its ability to promote adsorption of protein on red cells and was found to be much more active than any inulin preparation. Adsorption of protein antigen by tannic acid treated cells is rapid and takes place at 0°–4° C. as well as at higher temperatures. Cells so treated also adsorb P. P. D. and become agglutinable by antiserum to M. tuberculosis. Antibodies for P. P. D. were found in 24 of 25 human sera from patients with tuberculosis using the hemagglutination method. The patient with no demonstrable antibodies had minimal disease. Other antigen systems tested were ovalbumin, horse serum globulin and albumin, chicken serum globulin, and a streptococcus protein preparation. Small amounts of antigens can be detected by their ability to inhibit agglutination of the treated cells. K.

Tropical Eosinophilia and Filariasis. Reisel, J. H., and Groen, J.: Nederl. tijdschr. v. geneesk. **95**: 1736, 1951.

The authors reviewed the literature on tropical eosinophilia. During the past 10 years, investigators in the East Indies have observed the occurrence of high eosinophilic counts in patients in whom lymph nodes were found to contain microfilariae. The writers report such a case and suggest that an etiologic relationship exists between tropical eosinophilia and filariasis. H.

Chlorcyclizine Hydrochloride Ointment in Pruritic Dermatoses. Ayres, S., III, and Ayres, S., Jr.: Arch. Dermat. & Syph. **64**: 207, 1951.

One per cent chlorcyclizine hydrochloride in a greaseless ointment base was used for a period of one year in the treatment of several hundred patients with different types of pruritic dermatoses. A satisfactory degree of relief was obtained in many cases, especially in those with localized neurodermatitis or with pruritus ani, vulvae and scroti. In most cases, other forms of therapy, such as oral antihistaminics, fractional doses of superficial x-ray and calcium injections were given concurrently. However, the efficacy of the drug was demonstrated when a placebo consisting of the ointment base in an identical tube was substituted. Several hundred patch tests with the ointment elicited negative reactions. Not a single case of contact sensitization was observed. It is expected that, as the number of patients exposed to the drug increases, a certain incidence of sensitization is likely to occur. C.

The Shwartzman Phenomenon Complicating Acute Meningococcemia With Meningitis. Sternberg, S. D., Zweifler, B. M., Gruber, S., and Lichterman, J.: J. Pediat. **38**: 369, 1951.

A case of meningitis with meningococcemia in a 7-year-old white male is presented. Marked purpuric and ecchymotic skin lesions developed early in the disease followed by necrosis, sloughing, and eventual recovery. The authors consider this to be a Shwartzman reaction.

The mechanism is thought to be as follows: the toxic products of the meningococci lodged in the capillaries of the skin serve as the preparatory factor, while the meningococci or their products circulating in the blood stream act as the provocative factor. J. S.

Effect of ACTH on the Antistreptolysin O and Gamma Globulin Response to Hemolytic Streptococcal Infection (Scarlet Fever) and on the Development of Post Streptococcal Sequelae. Massell, B. F., Place, E. H., Sturgis, G. P., Prizer, M., Knobloch, J. D., and Shih-Man, C.: Proc. Second Clinical ACTH Conference, Vol. I, p. 486, Kingsport Press, Kingsport, Tenn. (Blackiston Co.), 1951.

A total of 20 alternate cases of scarlet fever were given 30 mg. ACTH daily for 14 days and were studied with particular attention being paid to antistreptolysin O titers, the development of glomerulonephritis, the effect on throat flora, and gamma globulin response as measured by turbidimetric readings. No influence on any of these factors could be attributed to ACTH. Two ACTH-treated patients and one control developed acute glomerulonephritis. K.

The Antiglobulin Test Technic and Practical Applications. Rosenfield, R. E., Vogel, P., and Rosenthal, N.: Am. J. Clin. Path. **21**: 301, 1951.

Antibodies which lack the property of agglutinating red cells under the usual testing conditions ("univalent," "blocking," "incomplete," etc.) interfere with the demonstration of agglutinins responsible for hemolytic disease of the newborn and hemolytic reactions to blood transfusions. These antibodies may be demonstrated by the antiglobulin test which consists of the addition of rabbit antihuman gamma globulin serum to a suspension of red cells coated with blocking antibody. Under these conditions agglutination occurs. The same principle may be applied to Rh agglutination and to bacterial agglutination. A modification of the usual technic to increase the sensitivity of the test and the clinical applications are presented in some detail. False negative reactions have been observed in instances where the union between red cell and human hemagglutinin is not stronger than the union between human hemagglutinin and rabbit antihuman gamma globulin or in instances where there are complete agglutinating antibodies but no incomplete (or blocking) antibodies. This latter condition is very rare and "a false negative reaction has never been encountered in Rh hemolytic anemia." K.

Investigation of a Derivative of Penicillin in Pulmonary Suppuration. Apthorp, J.: New Zealand M. J. **50**: 338, 1951.

Hydriodide ester of penicillin G, administered intramuscularly to patients with chronic suppurative bronchiectasis, exhibited selective action on lung tissues. The amount of sputum was reduced during the treatment period. Hemolytic streptococci and pneumococci were temporarily eliminated from the sputum which showed no other significant changes. The potentialities of the drug in the treatment of various types of bronchial infections are discussed. H.

Serological Epidemiology: Antibody Patterns in North Alaskan Eskimos. Paul, J. R., Riordan, J. T., and Kraft, L. M.: J. Immunol. **66**: 695, 1951.

Sera from blood samples drawn from 242 Eskimos, who had been relatively isolated from exposure to infectious diseases, were studied for antibodies to Lansing polio virus, some of the Coxsackie viruses, mumps virus, Trichinella spiralis, and Treponema pallidum. The results showed that 20 years after contact with the polio virus, the vast majority of exposed subjects still retained high antibody titers. Gamma globulin levels were found to be unusually high without any obvious explanation for the finding. These studies suggest that following a single contact with certain antigens, antibody production may be maintained almost indefinitely. R. W.